FEDERAL ENERGY MANAGEMENT PROGRAM

Fine-Tuning for Best-Value Super ESPC Deals Using the Responsibility Matrix

Super Energy Savings Performance Contracts (Super ESPCs) are a practical and flexible tool for obtaining energy improvements for federal facilities. While the overarching Super ESPC establishes general terms and conditions of the agreement between the agency and the energy service company (ESCO), the contract leaves broad latitude to custom-tailor a deal to suit the agency's own particular needs, priorities, and circumstances.

The agency can precisely define the nature of the savings guarantee and how optimum performance of the energy-conservation measures (ECMs) will be ensured throughout the life of the contract. A full awareness of all the options and associated costs can help the agency negotiate a deal that uses the agency's resources effectively, makes good business sense, and yields optimum value. Understanding the practices, costs, and logic of private-sector financing for Super ESPCs is also critical in crafting a best-value contract.

What's in a Guarantee?

At the heart of a performance contract is a guarantee of a specified level of cost savings and performance. The customer is not obligated to pay for an unmet guarantee. The question is, what exactly is being guaranteed? Who is responsible for factors that affect performance and savings? And who pays for what?

A "Responsibility Matrix" in the Super ESPC describes three categories of responsibilities or factors at work in the contract—operational, performance, and financial. The allocation of responsibilities between the agency and the ESCO defines the specifics of the guarantee, who does what, and who pays for what during the term of the contract. Early in the process of developing the project, the ESCO and the agency review the matrix and evaluate how to allocate these responsibilities, taking into consideration the agency's resources and preferences.

A few fundamental principles can be applied to the allocation of responsibilities in Super ESPC agreements:

- The party with the greatest ability to cost-effectively manage a responsibility should be financially responsible for doing so.
- The party bearing a responsibility should have an opportunity to be compensated.
- The party that creates a cost should bear that cost.

Operational Factors: Operating Hours, Plug Load, Weather, User Participation

Operating hours, plug load, weather, and user participation (or occupancy effects) may all affect energy usage and cost. In Super ESPC delivery orders, savings are calculated in relation to a baseline that represents the energy cost that would have occurred if the status quo had been maintained and no new ECMs had been installed. The agency and the ESCO agree on the baseline (or how the baseline will be determined) and how cost savings will be calculated and compared to the guarantee for verification. The guarantee and the method for verifying savings must be documented in the contract in a way that accounts for potential impacts of operational factors.

Over the term of the contract, if building occupants acquire no new electrical equipment that increases plug load, if the weather is not extreme, and if operating hours remain the same, the ESCO's estimates of energy savings will likely prove accurate and the guarantee will be met. However, if extreme weather occurs, if occupants increase the number of computers or other office equipment in use, or if a plant adds a second shift, energy usage will increase and savings may appear smaller than expected.

Who is responsible for this increase in energy use under the contract? The agency, as the party with the greatest ability to cost-effectively control operational factors, generally takes financial responsibility. Even when the project doesn't totally eliminate potential cost increases from operational factors, it does minimize cost increases and make them more manageable than before.

Operating Hours and Plug Load

The agency generally assumes financial responsibility for operating hours and load in one of two ways:

- Baseline adjustments. The contract can allow specified baseline adjustments for changes in operational factors so that savings calculated in relation to the higher baseline will better reflect the savings attributable to the new ECMs. Baseline adjustments must be supported by measurements.

• Stipulation. Both parties can accept stipulated operational factors and estimated savings based on engineering calculations and measurements as a fair representation of savings. If related requirements are met (i.e., satisfactory commissioning results and maintenance tasks performed), the guarantee is considered to be met. Operating hours and plug loads are often stipulated. With well-proven, predictable technologies, stipulation is often the most practical choice. The alternative is for the agency to spend money on measurements and monitoring just to check up on itself.

Weather

No one but Mother Nature controls the weather, but it can be a major factor in energy usage. A sensible approach is to normalize calculations of the baseline and yearly energy savings to a typical weather year. In mild weather years, savings will seem small, but the energy bill will also be smaller than normal and the ESCO payment manageable, with funds to spare. In extreme weather, savings will exceed expectations, and it will be easier for the agency to manage and pay all its bills than before the project.

User Participation

The behavior of building occupants is subject to only minimal control by anyone. One strategy for handling occupancy effects is to stipulate comfort settings to use in calculations and document the baseline.

Performance Factors/Responsibilities: Equipment Performance, Operations, Maintenance, Repair & Replacement

Performance of the ECMs is the foundation of the guarantee and the value of the project. The ESCO is ultimately responsible for selection, application design, installation, and performance of the equipment, and must maintain specified standards of service (temperature, humidity, lighting levels, etc.). To be negotiated and spelled out in the contract are: (1) whether the ESCO will carry this responsibility just through project acceptance by the agency, for a limited period to prove performance and standards of service, or for the entire term of the contract; (2) how performance and standards of service will be verified; and (3) what the consequences for unacceptable performance and standards of service will be.

Responsibility for operations and maintenance (O&M) and equipment repair and replacement (R&R) is negotiable and may be assumed by the ESCO, agency staff, or subcontractors. In any case, it is critical to spell out how proper performance of these functions will be ensured. Typically the agency operates the equipment with ESCO oversight. Maintenance can go either way, but the ESCO is always responsible for defining the maintenance program and verifying execution. Generally the ESCO is responsible for R&R through extended equipment warranties. However, individual agencies should negotiate whatever arrangement best addresses their needs. Some choose to keep all of these functions in-house to minimize the cost of the project; others lack the in-house capability or prefer to pay more for the “insurance” of having one responsible party for all these functions.

Financial Factors: Energy Prices, Construction Costs, M&V Costs, Delays, Changes in Facilities, Interest Rates

Energy Prices

Energy prices, along with usage, determine the dollar value of the energy-cost savings guaranteed by the ESCO. Since crystal balls are in short supply and neither party has any control over energy prices, agencies and ESCOs generally opt for simple and practical ways to arrive at prices to use in savings calculations. A common practice is to stipulate current energy prices for the first year of the contract and use the energy price escalators published by DOE’s Energy Information Administration for succeeding years.

The chances that this approach will have serious financial consequences for the agency are virtually nil. If prices turn out to be lower than expected, “savings” may be smaller on paper than projected, but the agency benefits from the lower prices and will be able to pay its bills. If energy prices are higher than projected, savings will exceed expectations, and the problem of higher prices will be easier to manage because the agency will be buying less energy than before the Super ESPC project. Keep in mind that the primary purpose of the guarantee is to ensure that the agency will be able to pay all its bills—to the ESCO and for energy and related O&M—from its annual energy and related O&M appropriations.

Construction Costs

The ESCO can control construction costs and generally guarantees a firm, fixed price for the project, typically taking bids and locking in subcontractor prices before submitting the final proposal. Contract and price modifications are rare in Super ESPC projects.

M&V Costs

In considering the wide range of measurement and verification (M&V) options and costs, the key questions are: (1) How much do I want to spend? (2) What degree of accuracy do I need? and (3) What are the tradeoffs? Some agencies want more detailed data to verify savings to a very high degree of confidence and are willing to pay the price. Those intent on getting as many improvements as possible (to generate more savings) can take a practical, but less elaborate, less expensive approach. M&V costs in Super ESPC projects have averaged 3.86% of first-year guaranteed cost savings, with half of these projects keeping costs below 2.5%.

Delays

Both the ESCO and the agency can cause delays that have financial consequences, and the party that causes the delay should probably have to pay for it. Delays can be especially serious during construction, when the ESCO must meet the milestones of a very specific schedule to draw down construction funds.

Major Changes in Facilities

Agencies who are certain that major changes are planned for some of their facilities should not pursue Super ESPC projects in those buildings, and buildings of questionable longevity should obviously not be included in improvement projects. However, agencies must work with the information available to them, and valuable opportunities for achieving energy savings and improvements in government facilities shouldn't be missed for lack of a crystal ball. Even if a facility were closed during the Super ESPC term, the government's financial obligations would be only the usual ones associated with closing facilities. To keep financiers comfortable (and interest rates as low as possible), the contract should include pre-negotiated terms for retirement of debt upon termination for convenience.

Interest Rates

Neither the ESCO, the agency, nor the financier controls interest rates. However, financing transaction costs can be affected by the agency's choices. Understanding the structuring, costs, and logic of private-sector financing for Super ESPC projects will help agency acquisition teams accelerate the negotiation and approval of delivery orders and keep financing costs as low as possible. The following section provides a brief overview of the essentials of private-sector financing.

Private-Sector Financing and the Money Trail

The contract between the ESCO and the agency covers development and construction of the project, any performance-period services to be provided by the ESCO, and repayment of the financing. Most Super ESPC ESCOs finance energy projects for the government through third-party lenders. After the delivery order is awarded, the ESCO draws funds from the lender in stages as construction milestones are met. After the project is constructed and accepted and all the financing is drawn down, the agency begins making payments that continue over the contract term. Payments comprise remuneration to (1) the lender for debt service and (2) the ESCO for performance-period services. Payments may be assigned to a trustee for administration.

Total project development and implementation costs include, for each energy conservation measure, (1) the ESCO's direct costs for developing and constructing the project and (2) the ESCO's markup to cover overhead, indirect costs, and profit. Maximum allowable markups for each technology category were negotiated for each ESCO's prime contract. The financing is used to pay for development and implementation costs.

What's in an Interest Rate?

The total annual interest rate has two components: an index interest rate and a premium to cover the lender's costs and profit. Maximum allowable premiums are set in each ESCO's prime contract.

The Index Rate

The interest rate depends mostly on the prevailing cost of money in the financial marketplace. The cost of money varies day to day. Financiers of Super ESPC projects generally go to the marketplace the day before delivery order award and lock in the financing. The index interest rate obtained for the project is whatever is available that day. U.S. Treasury Bills (T-Bills) are commonly used as the index because there is a large-volume, liquid market for those securities and historically they have been a stable indicator of the cost of money. There are 5-, 10-, and 30-year T-Bills; lenders typically price to the "like-term" T-Bill, or the one whose term is closest to the delivery order term. Other indexes can be used; whichever index is acceptable to all parties may be the reference index for a Super ESPC loan.

The Premium

A premium is added to the index interest rate to cover the lender's transaction costs and any cost of money not covered by the index rate. The premium is measured in basis points; 100 basis points equals 1%. Super ESPC loan premiums have been in the range of 140 to 340 basis points, with an average of 210. If T-Bills are the index, the premium covers costs grouped in two categories: hedging spread and lender's spread.

The hedging spread represents the financier's cost of money over and above the index rate. T-bill rates have been the predominant index for many years, but depending on market dynamics, other indexes may be better proxies for the true cost of money to commercial entities. For example, recently when the U.S. Treasury was buying back 30-year T-Bills, the normal T-Bill yield to maturity relationship inverted, causing hedging spreads to balloon. During this period the LIBOR (London Interbank Offering Rate) 3-month swap became more widely used as a stable measure of the true cost of money. The swap is an indicator of the total cost of money, comparable to the sum of the like-term T-Bill plus hedging spread.

The lender's spread covers the lender's costs for legal fees, documentation, profit, loan administration, and perceived risk.

Evaluating Total Finance Costs

The best way to evaluate finance costs is to calculate the total financing costs (all non-principal payments) over the life of the contract as a percentage of total payments (principal plus total financing costs). The lender can provide a breakdown of the costs: up front fee (if any); interest rate; true cost of funds (index rate plus hedging spread, or LIBOR 3-month swap); lender's spread; and prepayment fees.

What to Expect — Interest Rate Trends

As a general rule, the interest rate increases slightly with term, because the underlying cost of money follows this relationship. Also, generally, larger investments carry lower interest rates because the fixed transaction costs such as legal fees, document preparation, and administration get spread over a larger base. The most important factors in interest rates are the term, the amount financed, and the date the financing is placed (which determines the index rate).

The guarantees in Super ESPCs and the agency's right to withhold payments are perceived as a unique risk, which financial institutions do price into Super ESPC loans. Agencies can withhold payments to enforce guarantees of (1) annual verification per agreed procedures that cost savings exceed payments; (2) maintenance of standards of service (temperature, humidity, lighting levels); and (3) fulfillment of negotiated equipment operation, maintenance, repair, and replacement responsibilities.

Lenders have indicated that eliminating all contingencies on debt repayment would likely lower interest rates more than any other single action. Agencies could lower their finance costs by agreeing to withhold, in case of a savings shortfall or performance problems, only the portion of the payment that would go to the ESCO to cover performance-period services. Some agencies are considering this option, but the flexibility to do so is unclear under current statutes and regulations, and most agencies have chosen to hold the entire payment stream hostage to enforce their performance contracts.

Conclusions

FEMP's experience with Super ESPCs is proving them to be a flexible and practical vehicle for custom-tailoring energy projects to agencies' site-specific needs. Agencies can optimize the value of their projects by taking advantage of the broad latitude in the contracts to fine-tune the guarantee, specify ESCO services, and allocate responsibilities to suit their own in-house resources, capabilities, and priorities.

The wide range of M&V options available also allows agencies to "build to suit." M&V plans can call for complex, detailed verification schemes with correspondingly high costs, but can also provide for acceptable verification through less expensive means. M&V costs for half of all Super ESPC projects have been a reasonable 2.5% of first-year cost savings. Interest rates for Super ESPC projects have been reasonable as well and are no obstacle to structuring solid pay-from-savings projects.

The responsibility matrix is a convenient, useful format for agencies to use to study and understand all aspects of the Super ESPC deal. Using the matrix to consider the options and balance corresponding costs and benefits will help agencies build best-value energy projects and meet federal energy goals.

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